FIG. 1A (PRIOR ART)

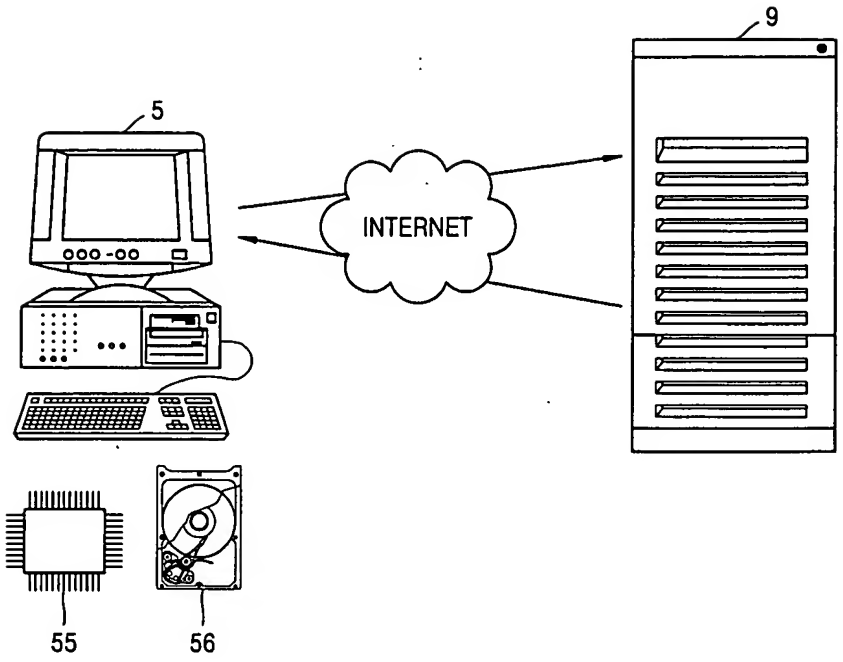
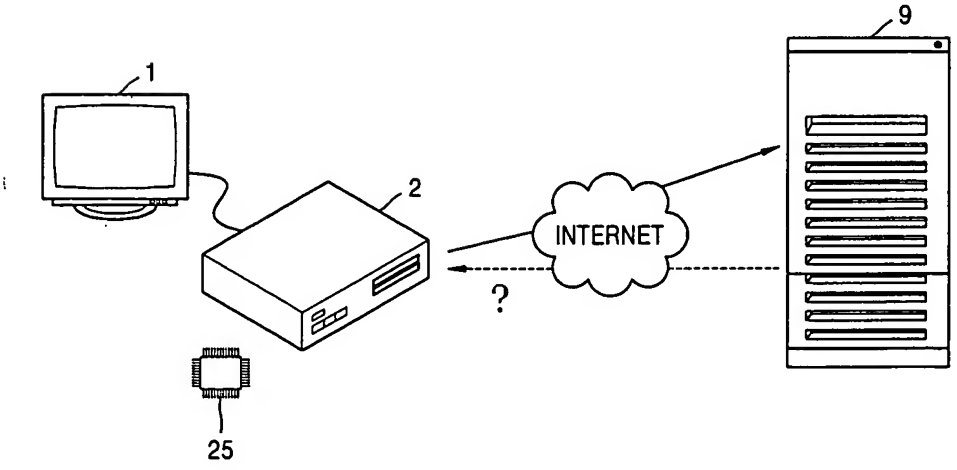



FIG. 1B (PRIOR ART)



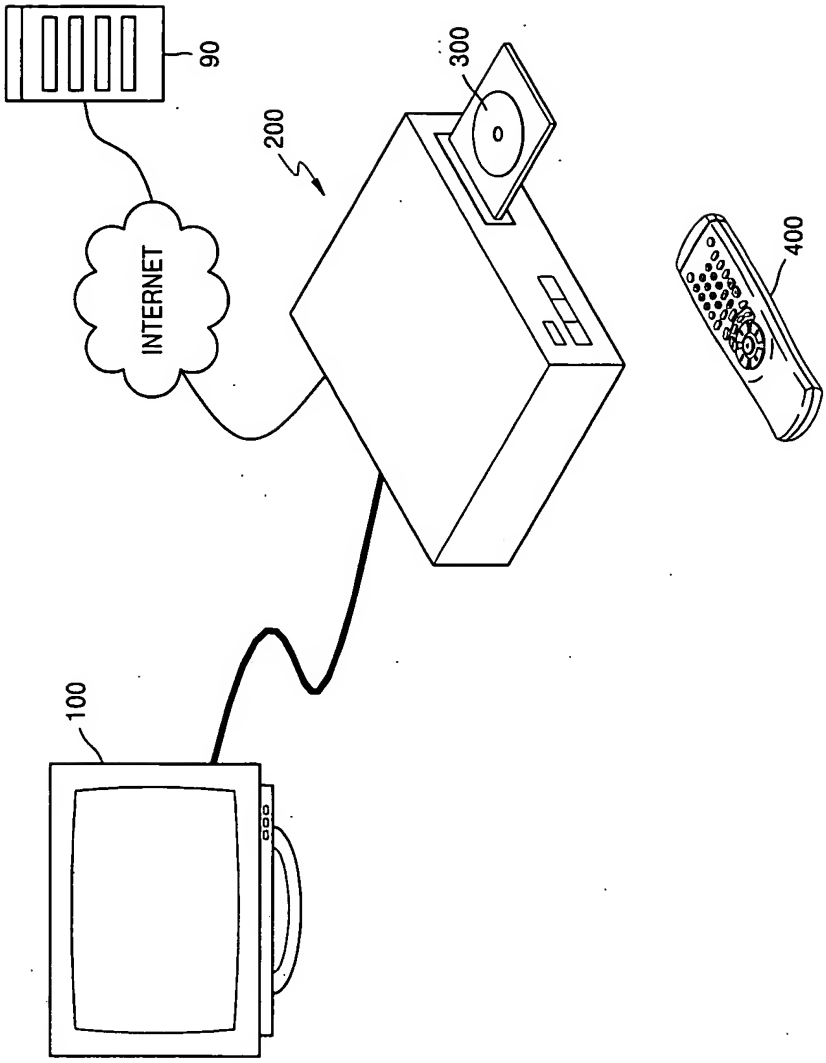



FIG. 2

FIG. 3

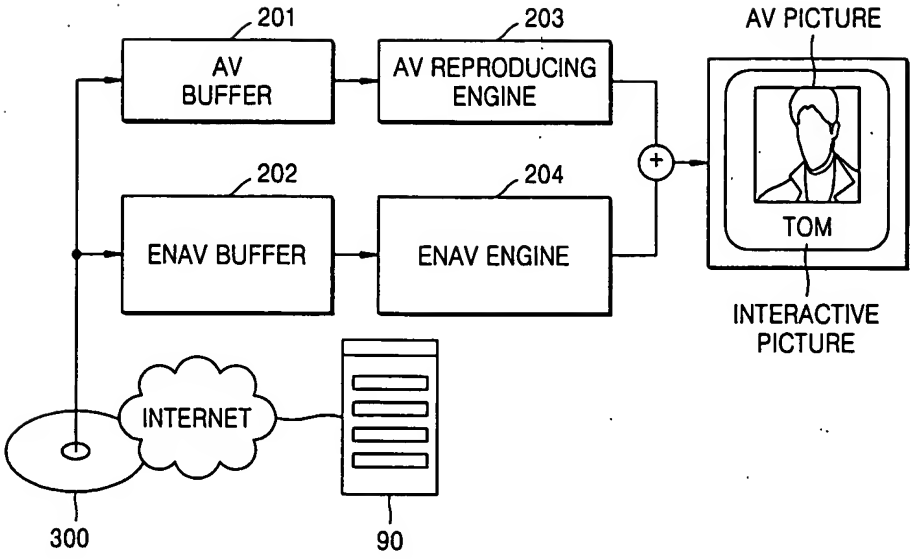

201
AV BUFFER
203
AV REPRODUCING ENGINE
AV PICTURE
202
ENAV BUFFER
204
ENAV ENGINE
TOM
INTERACTIVE PICTURE
INTERNET
300
90

FIG. 4

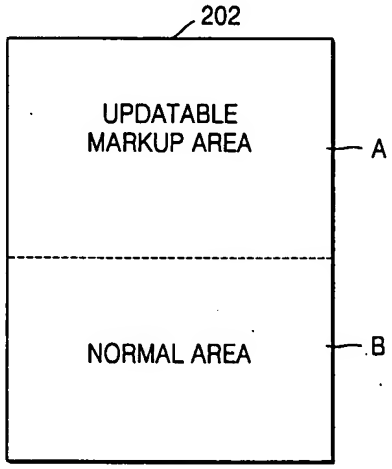

202
UPDATABLE MARKUP AREA
A
NORMAL AREA
B

FIG. 5

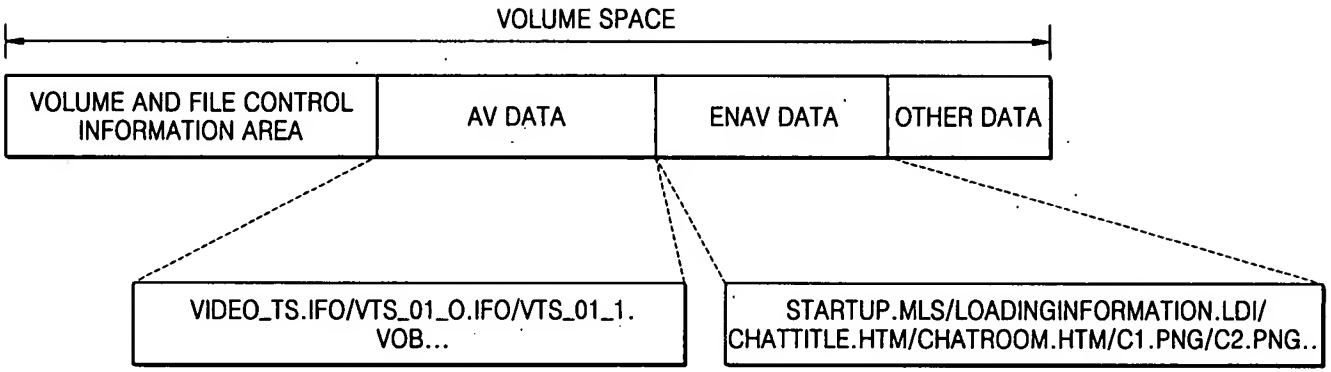

VOLUME SPACE
VOLUME AND FILE CONTROL INFORMATION AREA
AV DATA
ENAV DATA
OTHER DATA
VIDEO_TS.IFO/VTS_01_0.IFO/VTS_01_1.VOB...
STARTUP.MLS/LOADINGINFORMATION.LDI/CHATTITLE.HTM/CHATROOM.HTM/C1.PNG/C2.PNG..

FIG. 6

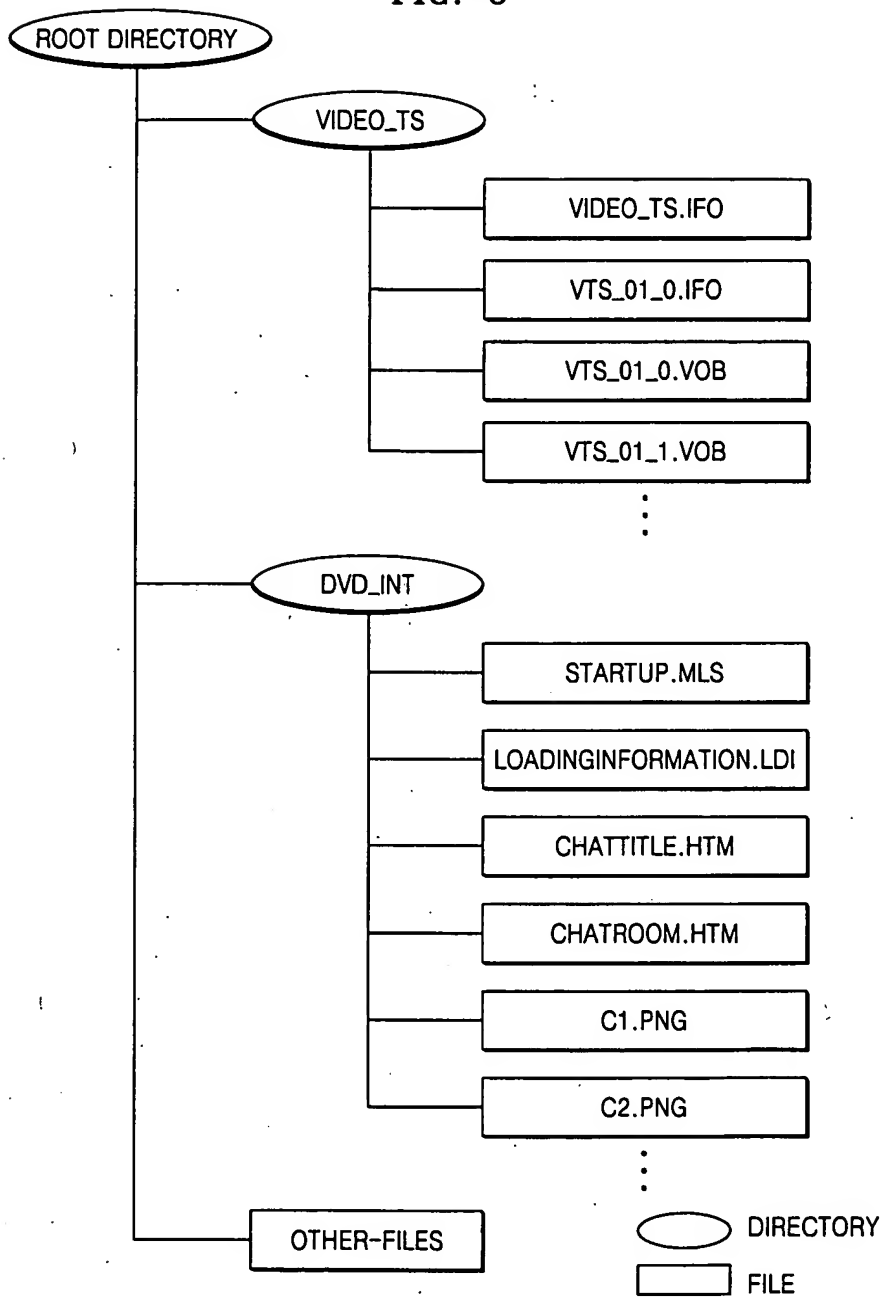

ROOT DIRECTORY
VIDEO_TS
VIDEO_TS.IFO
VTS_01_0.IFO
VTS_01_0.VOB
VTS_01_1.VOB
DVD_INT
STARTUP.MLS
LOADINGINFORMATION.LDI
CHATTITLE.HTM
CHATROOM.HTM
C1.PNG
C2.PNG
OTHER-FILES
DIRECTORY
FILE

FIG. 7

<STARTUP.MLS>

```
<startup>
    . . .
    <loadinginfo href="file://dvdrom:/DVD_ENAV/LoadingInformation.ldi">
    </loadinginfo>
    . . .
</startup>
```

C

FIG. 8

<LOADINGINFORMATION.LDI>

```
<?xml version="1.0" ?>
<!DOCTYPE manifest PUBLIC "-//DVD//DTD DVD-MLS 1.0//EN"
"dtd/dvdmls-1-0-content.dtd">

<manifest>
<memory name="um" size="6KB" />
<entityset xml:base="file://dvd_ENVA/" type="preload">
<initial href="CHATROOM.HTM"/>
<entity href="CHATTITLE.HTM"/>
<entity href="C1.PNG"/>
<entity href="C2.PNG"/>
<entity href="http://www.company.com/INPUT.HTM"/>
<entity href="http://www.company.com/P1.GIF"/>
<entity buffer="um" href="http://www.company.com/DIALOG.HTM"/>
<entity buffer="um" href="http://www.company.com/DIALOG.CSS"/>
</entityset>
</manifest>
```

D

FIG. 9

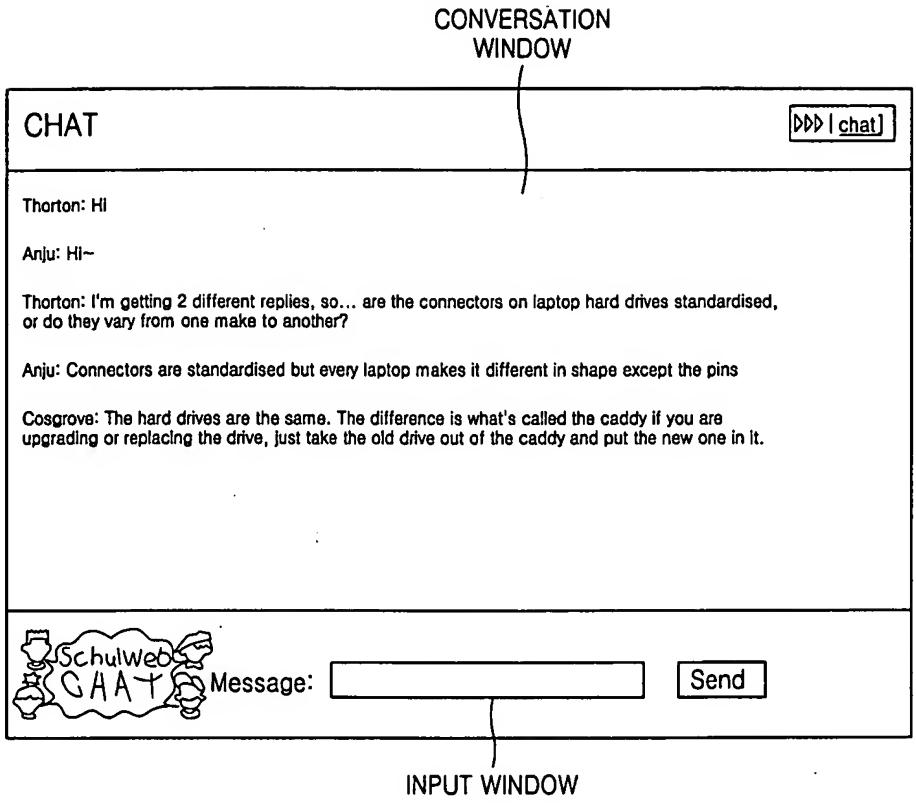

CONVERSATION WINDOW
CHAT
chat
Thorton: HI
Anju: Hi~
Thorton: I'm getting 2 different replies, so... are the connectors on laptop hard drives standardised, or do they vary from one make to another?
Anju: Connectors are standardised but every laptop makes it different in shape except the pins
Cosgrove: The hard drives are the same. The difference is what's called the caddy if you are upgrading or replacing the drive, just take the old drive out of the caddy and put the new one in it.
Schulweb CHAT
Message:
Send
INPUT WINDOW

FIG. 10

```
<html>
<head>
<title>Chat Room</title>
</head>
<frameset border="0" framespacing="0" rows="50,*,70" frameborder="no">
  <frame name=menuoben marginwidth=1 marginheight=1 src="chattitle.htm" noresize="1" scrolling="no" />
  <frame name=inhalt marginwidth=1 marginheight=1 src="http://www.company.com/dialog.htm"
    frameborder="no" noresize="1" scrolling="no" />
  <frame src="input.htm" />
<noframes>
<p>Browser has to support to frameset.</p>
</noframes>
</frameset>
</html>
```

FIG. 11

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="dialog.css" />
<script type="text/ecmascript">
function update()
{
  location.href = "dialog.htm"
}
</script>
</head>
<body onload="settimeout('update()',1000);">
<p><span class="thorton">thorton:</span><span class="thorton_text">hi</span></p>
<p><span class="anju">anju:</span></span><span class="anju_text">hi~</span></p>
<p><span class="thorton">thorton:</span><span class="thorton_text">
i'm getting 2 different replies, so... are the connectors on laptop
hard drives standardised,
or do they vary from one make to another?</span></p>
<p><span class="anju">anju:</span><span class="anju_text">connectors are standardised but every laptop makes
it different in shape except the pins</span></p>
<p><span class="cosgrove">cosgrove:</span><span class="cosgrove_text">the hard drives are the same. the
difference is what's called the caddy. if you are upgrading or replacing the drive,
just take the old drive out of the caddy and put the new one in it.</span></p>
</body>
</html>
```

FIG. 12

```
<html>
<head>
<title>input</title>
<body style="background-image: url(p1.gif)" >
<table width="515">
  <tr>
    <td valign="top" width="135"><img style = "height: 60px; width: 135px"
     src="file://c1.png" border="0">
    </td>
    <td style="align:right" style="width: 310px">
     <form method="post" action="="/cgi-bin/input.cgi">
     <p style="align: left"><br />message:<input maxlength="30" name="msgtext" size="30">
     <input type="submit" value="send" /> </form>
    </td>
  </tr>
</table>
</body>
</html>
```

FIG. 13

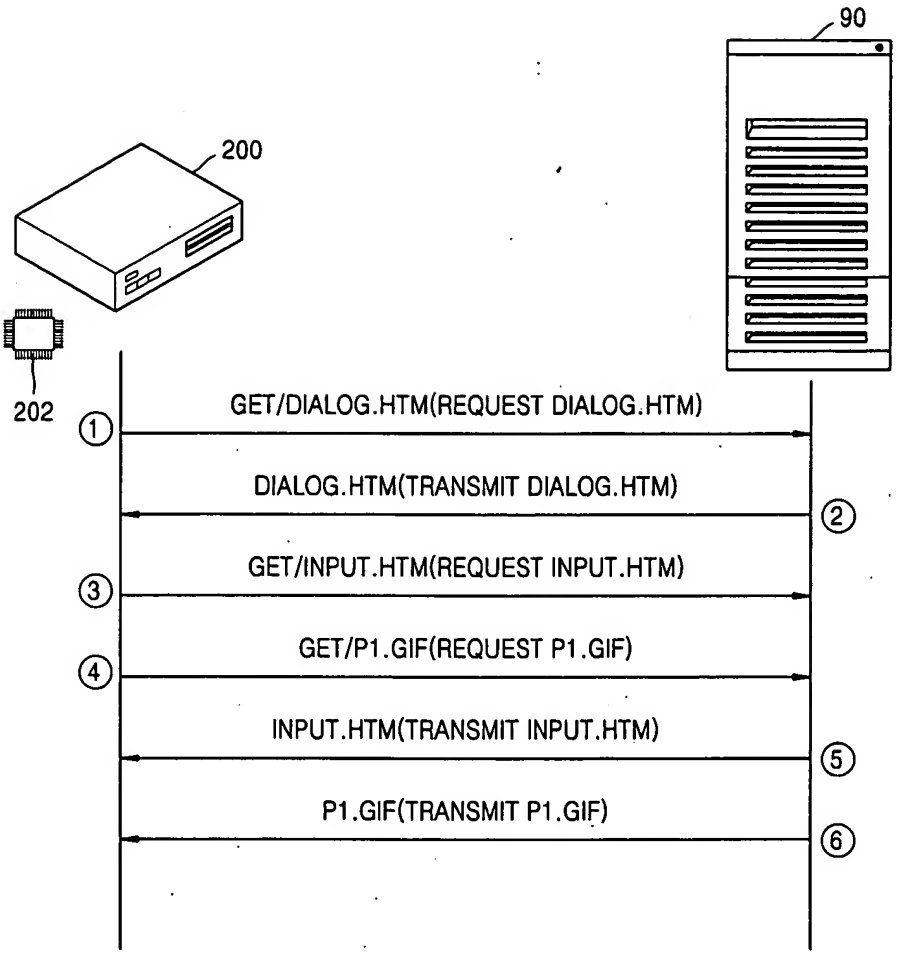

90
200
202
GET/DIALOG.HTM(REQUEST DIALOG.HTM)
①
DIALOG.HTM(TRANSMIT DIALOG.HTM)
②
GET/INPUT.HTM(REQUEST INPUT.HTM)
③
GET/P1.GIF(REQUEST P1.GIF)
④
INPUT.HTM(TRANSMIT INPUT.HTM)
⑤
P1.GIF(TRANSMIT P1.GIF)
⑥

FIG. 14

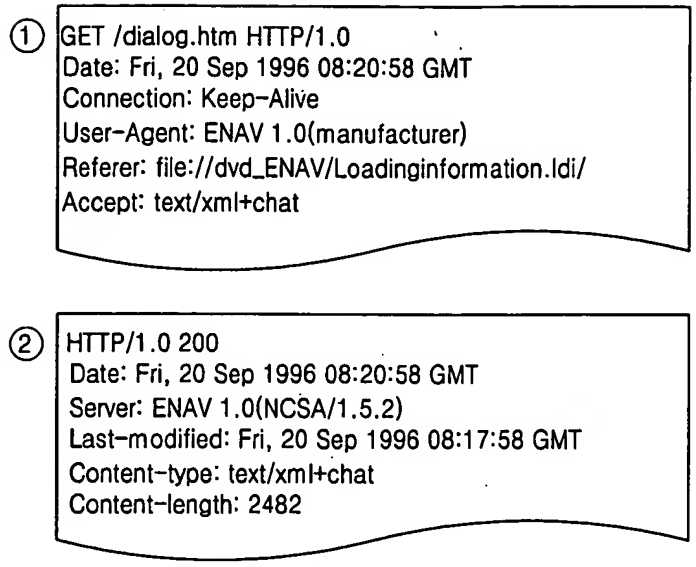

①
GET /dialog.htm HTTP/1.0
Date: Fri, 20 Sep 1996 08:20:58 GMT
Connection: Keep-Alive
User-Agent: ENAV 1.0(manufacturer)
Referer: file://dvd_ENAV/Loadinginformation.ldi/
Accept: text/xml+chat
②
HTTP/1.0 200
Date: Fri, 20 Sep 1996 08:20:58 GMT
Server: ENAV 1.0(NCSA/1.5.2)
Last-modified: Fri, 20 Sep 1996 08:17:58 GMT
Content-type: text/xml+chat
Content-length: 2482

FIG. 15

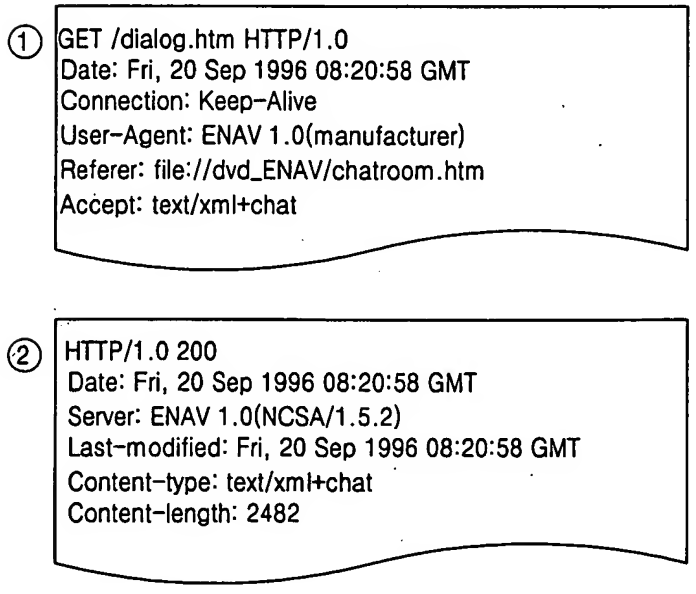

①
GET /dialog.htm HTTP/1.0
Date: Fri, 20 Sep 1996 08:20:58 GMT
Connection: Keep-Alive
User-Agent: ENAV 1.0(manufacturer)
Referer: file://dvd_ENAV/chatroom.htm
Accept: text/xml+chat
②
HTTP/1.0 200
Date: Fri, 20 Sep 1996 08:20:58 GMT
Server: ENAV 1.0(NCSA/1.5.2)
Last-modified: Fri, 20 Sep 1996 08:20:58 GMT
Content-type: text/xml+chat
Content-length: 2482

FIG. 16

| LOCATION OF FILE | MEMORY SIZE TO BE RESERVED | FILE TYPE (UPDATE) |
|---|---|---|
| http://www.company.com/DIALOG.HTM | 5KBytes | text/xml+chat (yes) |
| http://www.company.com/DIALOG.CSS | 1KBytes | text/css (yes) |
| http://www.company.com/INPUT.HTM | | image/xml+htm |
| http://www.company.com/P1.GIF | | image/gif |
| file://DVD_INT/CHATROOM.HTM | | image/xml+html |
| file://DVD_INT/CHATTITLE.HTM | | image/xml+html |
| file://DVD_INT/C1.PNG | | image/png |
| file://DVD_INT/C2.PNG | | image/png |

FIG. 17

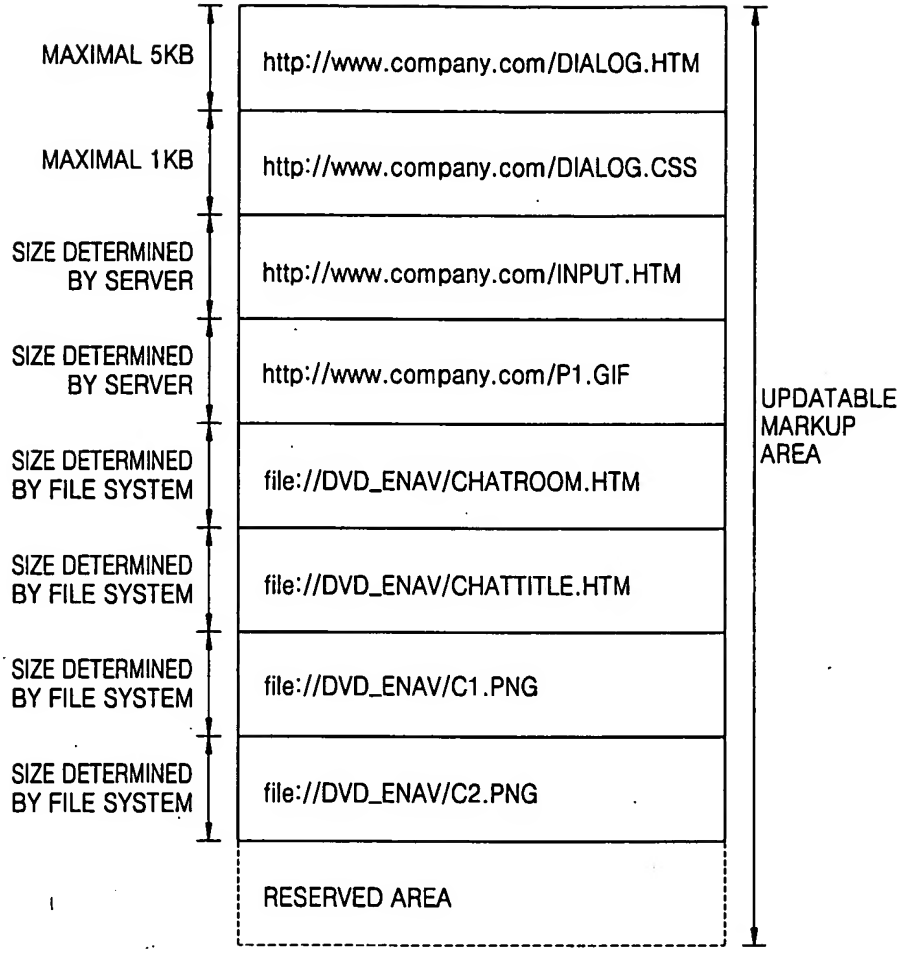

MAXIMAL 5KB
http://www.company.com/DIALOG.HTM
MAXIMAL 1KB
http://www.company.com/DIALOG.CSS
SIZE DETERMINED BY SERVER
http://www.company.com/INPUT.HTM
SIZE DETERMINED BY SERVER
http://www.company.com/P1.GIF
SIZE DETERMINED BY FILE SYSTEM
file://DVD_ENAV/CHATROOM.HTM
SIZE DETERMINED BY FILE SYSTEM
file://DVD_ENAV/CHATTITLE.HTM
SIZE DETERMINED BY FILE SYSTEM
file://DVD_ENAV/C1.PNG
SIZE DETERMINED BY FILE SYSTEM
file://DVD_ENAV/C2.PNG
RESERVED AREA
UPDATABLE MARKUP AREA

FIG. 18

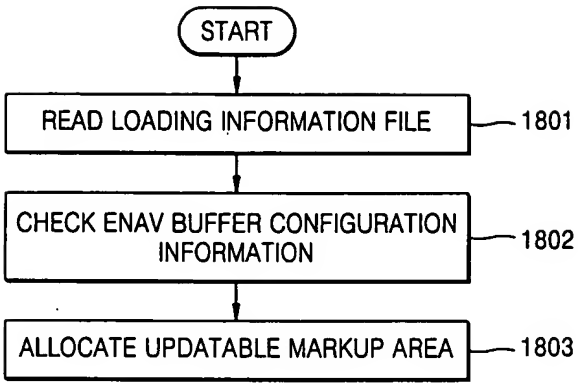
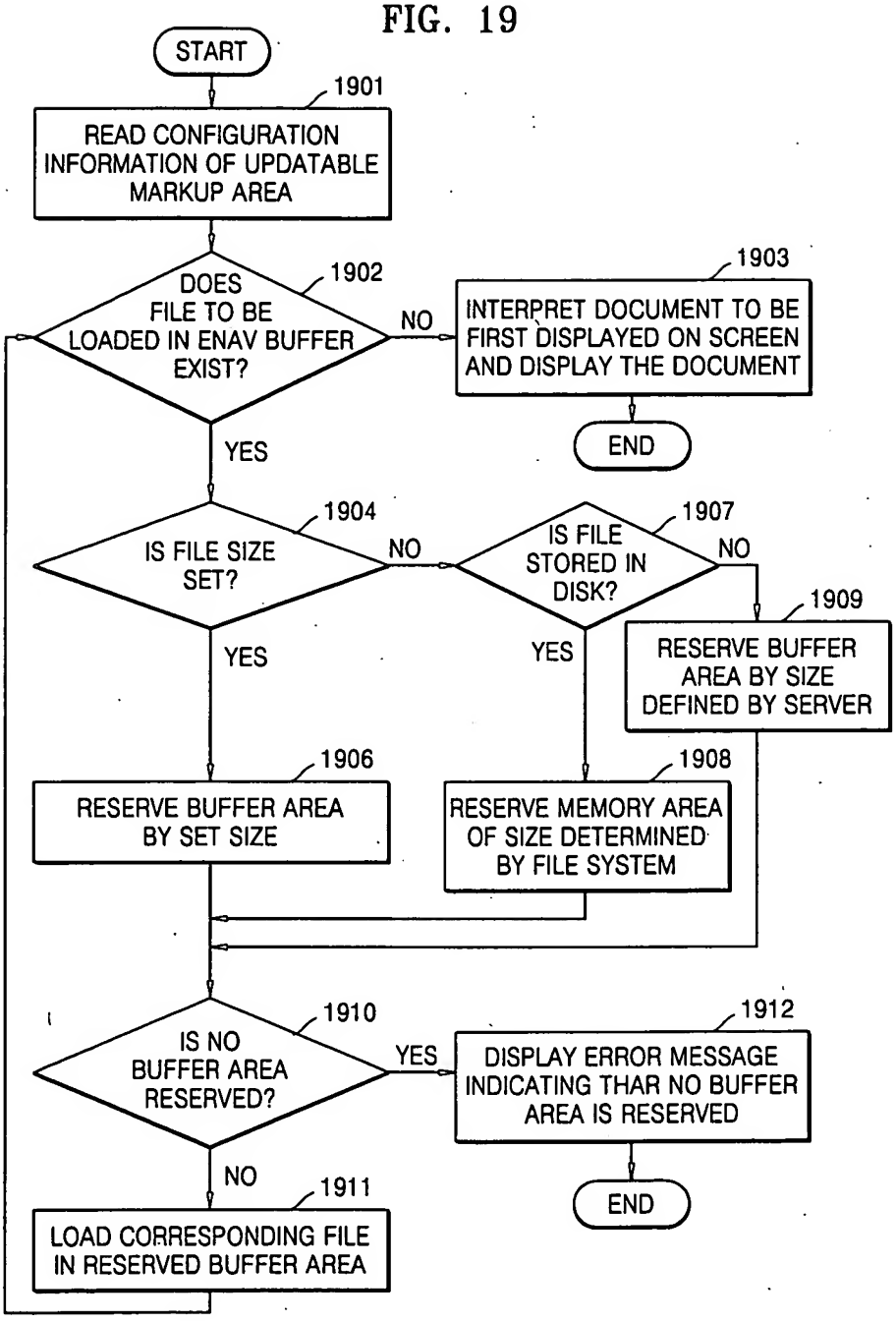

START
READ LOADING INFORMATION FILE
1801
CHECK ENAV BUFFER CONFIGURATION INFORMATION
1802
ALLOCATE UPDATABLE MARKUP AREA
1803

FIG. 19


START
1901
READ CONFIGURATION INFORMATION OF UPDATABLE MARKUP AREA
1902
DOES FILE TO BE LOADED IN ENAV BUFFER EXIST?
NO
1903
INTERPRET DOCUMENT TO BE FIRST DISPLAYED ON SCREEN AND DISPLAY THE DOCUMENT
END
YES
1904
IS FILE SIZE SET?
NO
1907
IS FILE STORED IN DISK?
NO
1909
RESERVE BUFFER AREA BY SIZE DEFINED BY SERVER
YES
YES
1906
RESERVE BUFFER AREA BY SET SIZE
1908
RESERVE MEMORY AREA OF SIZE DETERMINED BY FILE SYSTEM
1910
IS NO BUFFER AREA RESERVED?
YES
1912
DISPLAY ERROR MESSAGE INDICATING THAR NO BUFFER AREA IS RESERVED
NO
END
1911
LOAD CORRESPONDING FILE IN RESERVED BUFFER AREA